

ABSTRACT OF THE DISCLOSURE

Fuel temperature management is used to control the penetration distance of liquid-phase fuel into the combustion chamber of direct injection engines. Fuel temperature management enables the alteration of liquid-phase penetration distance to compensate for real-time changes in fuel composition, injector geometry, injection pressure, combustion mode, or combustion chamber thermodynamic conditions during engine operation. Alteration of the liquid-phase penetration distance prevents or reduces undesirable liquid fuel impingement on combustion chamber surfaces.